

FIG.1

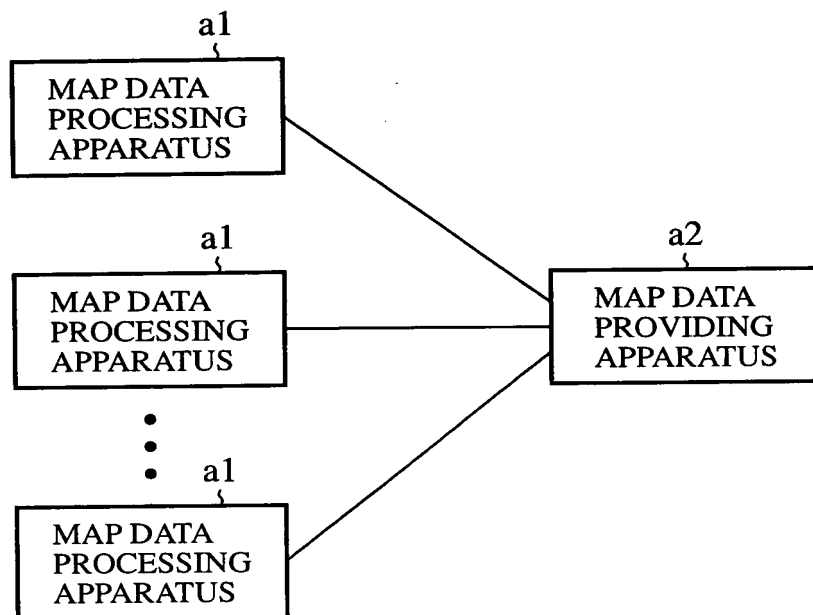


FIG.2

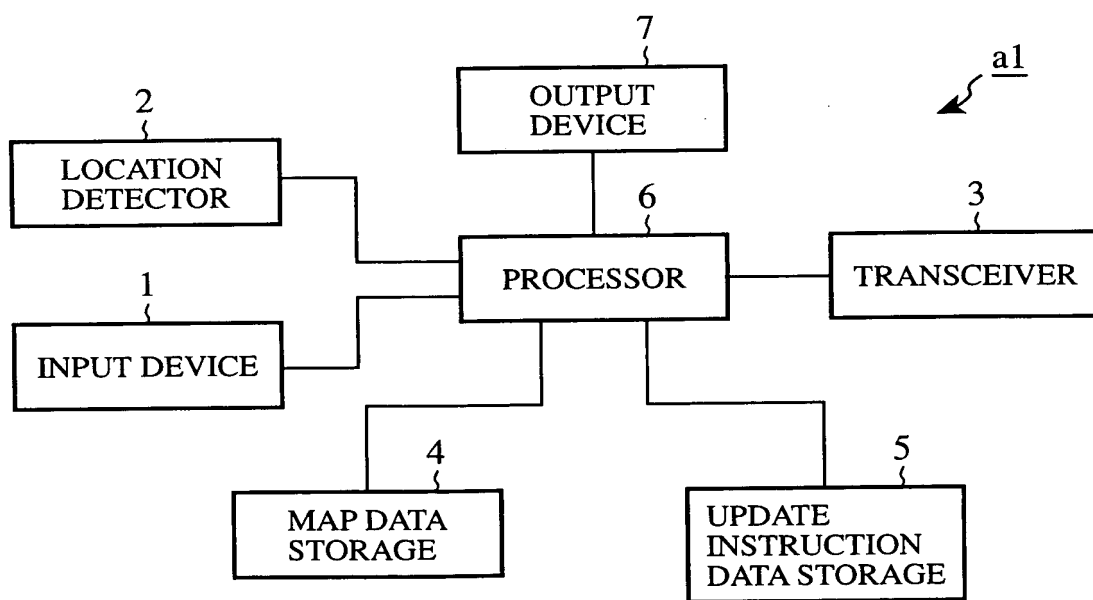


FIG.3

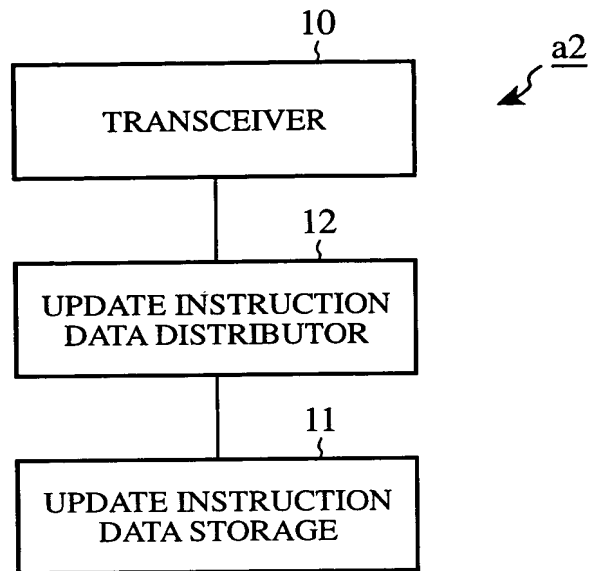


FIG.5

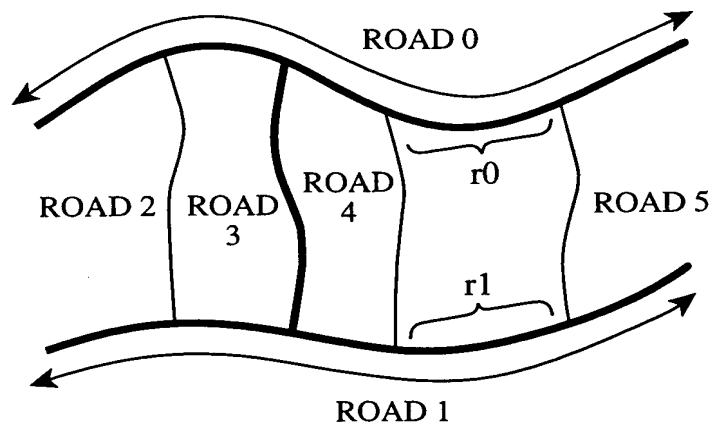


FIG.4

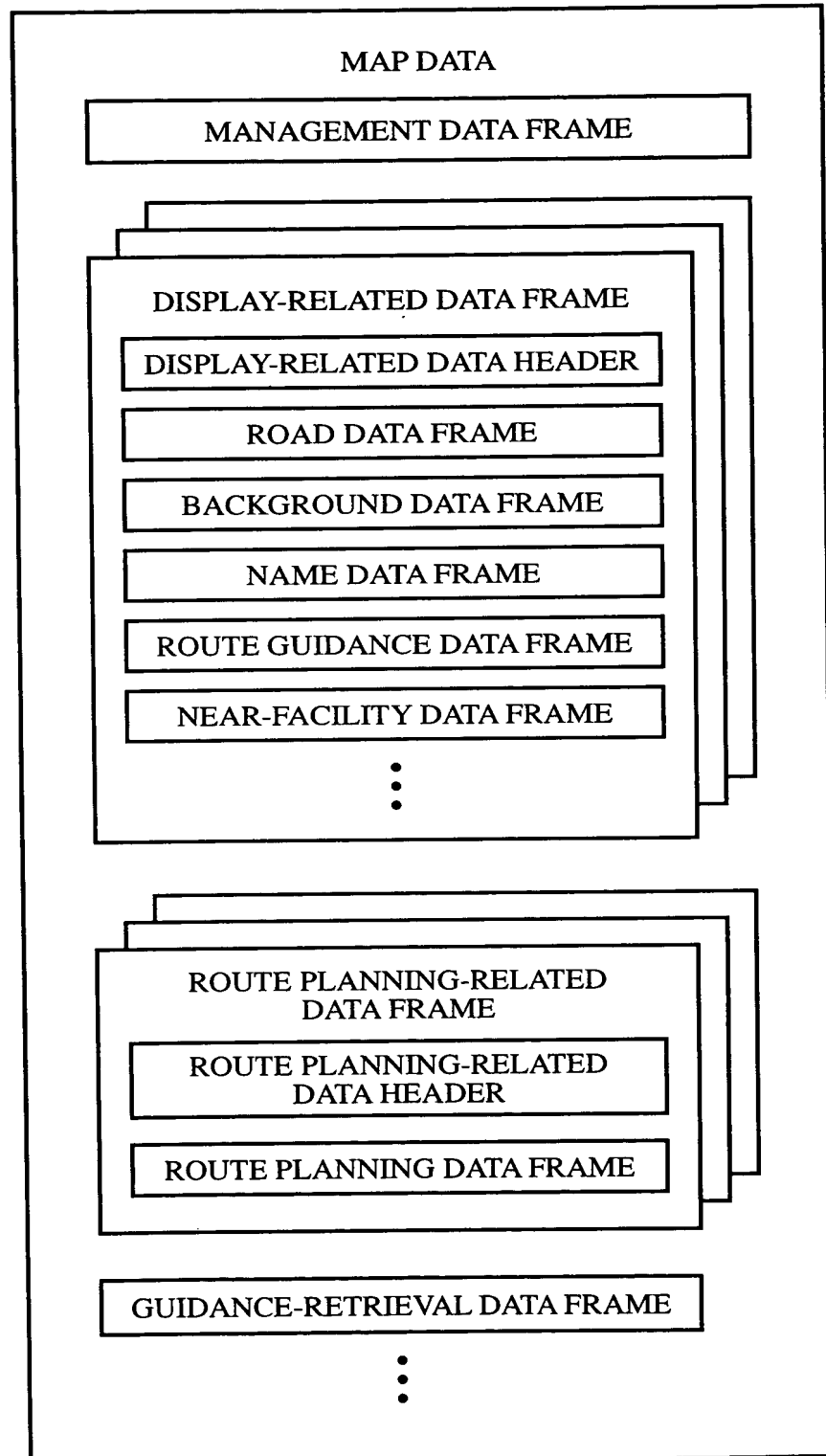


FIG.6

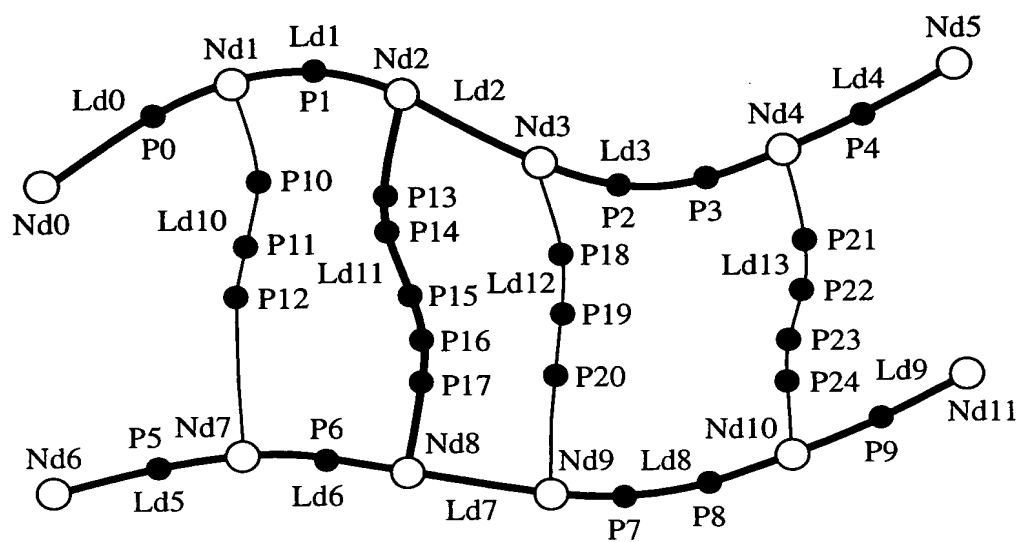


FIG.7

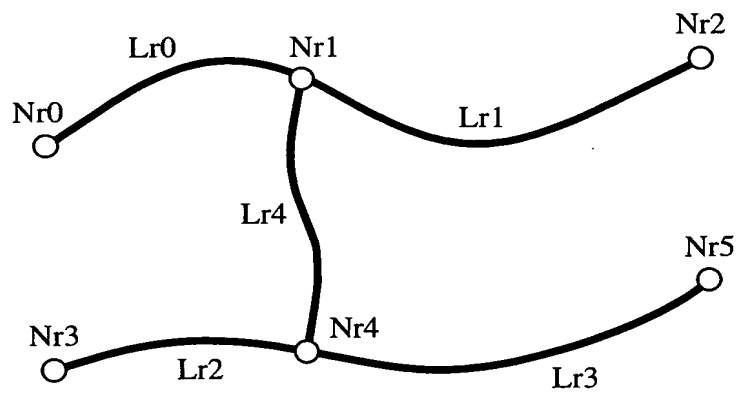


FIG.8

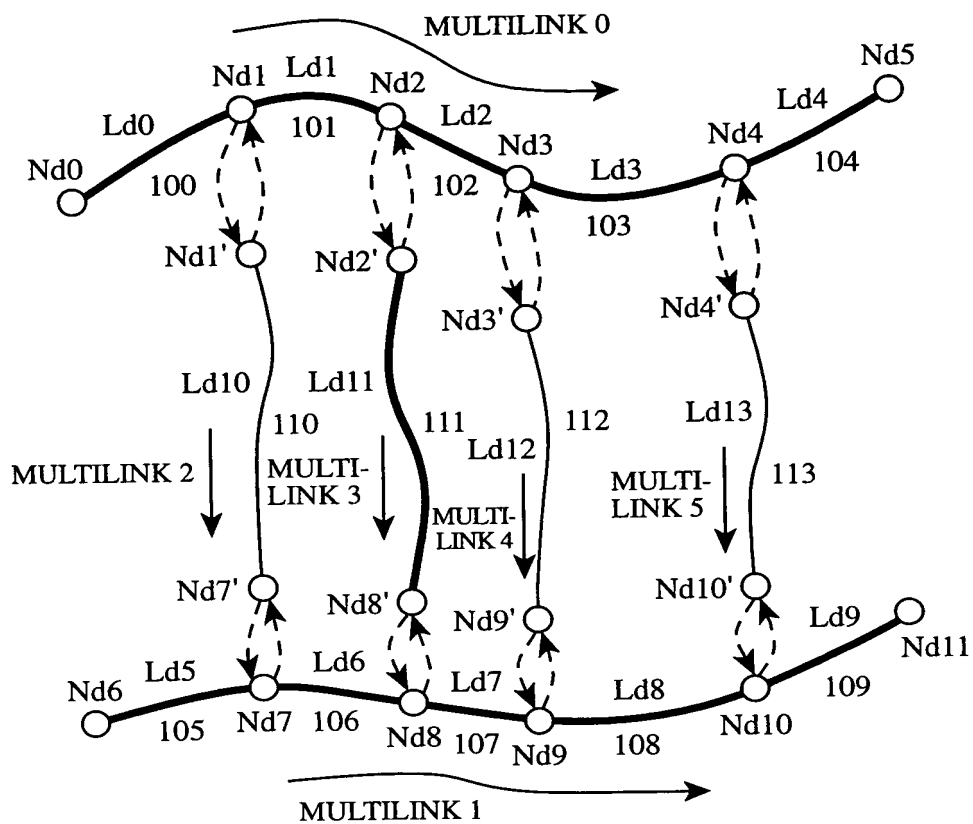


FIG.9

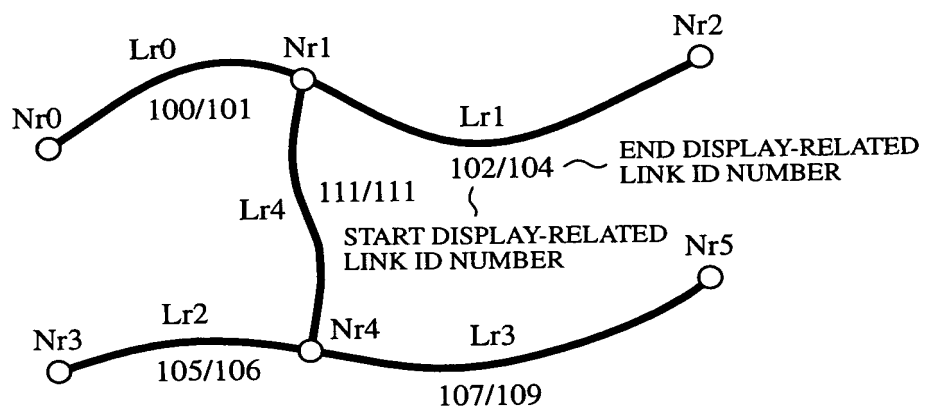


FIG.10A

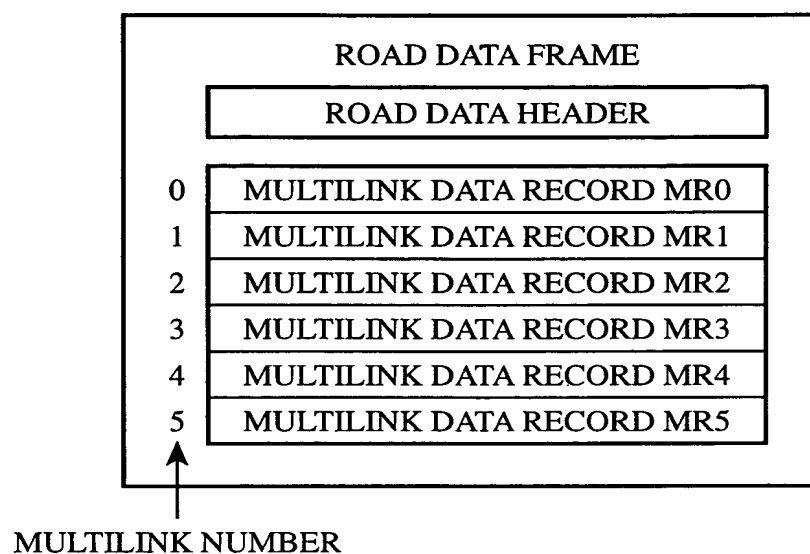


FIG.10B

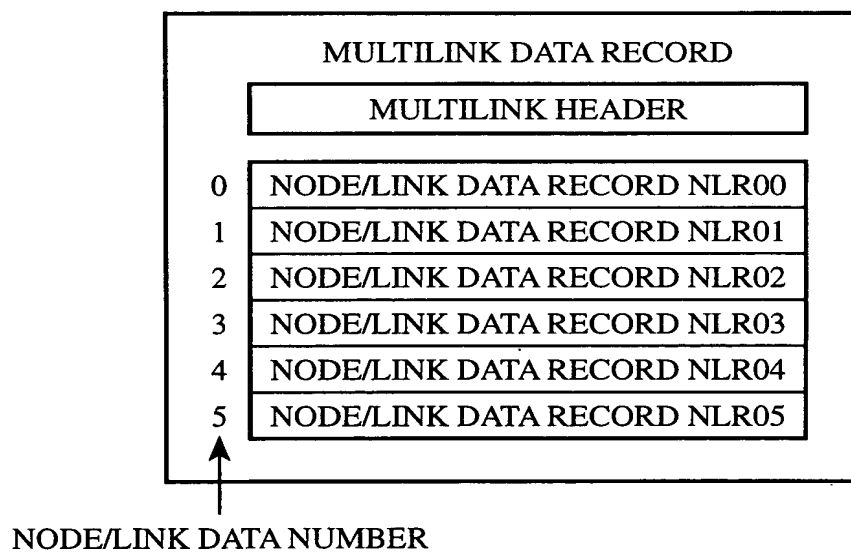


FIG.11

MULTILINK DATA RECORD MR0

DATA ITEM		NODE/LINK DATA RECORD					
		NLR00	NLR01	NLR02	NLR03	NLR04	NLR05
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	1	1	0	2	1	0
	AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT
INTERSECTION DESCRIPTION	MULTILINK #	-1	2	3	4	5	-1
	NODE/LINK DATA #	-1	0	0	0	0	-1
COORDINATES OF NODE		COORDINATES OF Nd0	COORDINATES OF Nd1	COORDINATES OF Nd2	COORDINATES OF Nd3	COORDINATES OF Nd4	COORDINATES OF Nd5
DISPLAY-RELATED LINK ID INFORMATION		100	101	102	103	104	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		NULL	NULL	NULL	NULL	NULL	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF P0	COORDINATES OF P1	ABSENT	COORDINATES OF P2 AND P3	COORDINATES OF P4	ABSENT

MULTILINK DATA RECORD MR5

DATA ITEM		NODE/LINK DATA RECORD	
		NLR50	NLR51
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	4	0
	AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT
INTERSECTION DESCRIPTION	MULTILINK #	0	1
	NODE/LINK DATA #	4	4
COORDINATES OF NODE		COORDINATES OF Nd4'	COORDINATES OF Nd10'
DISPLAY-RELATED LINK ID INFORMATION		113	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		NULL	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF P21-P24	ABSENT

FIG.12

MULTILINK DATA RECORD MR1

DATA ITEM		NODE/LINK DATA RECORD					
		NLR10	NLR11	NLR12	NLR13	NL104	NLR15
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	1	1	0	2	1	0
	AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT
INTERSECTION DESCRIPTION	MULTILINK #	-1	2	3	4	5	-1
	NODE/LINK DATA #	-1	1	1	1	1	-1
COORDINATES OF NODE		COORDINATES OF Nd6	COORDINATES OF Nd7	COORDINATES OF Nd8	COORDINATES OF Nd9	COORDINATES OF Nd10	COORDINATES OF Nd11
DISPLAY-RELATED LINK ID INFORMATION		105	106	107	108	109	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		NULL	NULL	NULL	NULL	NULL	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF P5	COORDINATES OF P6	ABSENT	COORDINATES OF P7 AND P8	COORDINATES OF P9	ABSENT

MULTILINK DATA RECORD MR3

DATA ITEM		NODE/LINK DATA RECORD	
		NLR30	NLR31
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	5	0
	AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT
INTERSECTION DESCRIPTION	MULTILINK #	0	1
	NODE/LINK DATA #	2	2
COORDINATES OF NODE		COORDINATES OF Nd2'	COORDINATES OF Nd8'
DISPLAY-RELATED LINK ID INFORMATION		111	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		NULL	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF P13-P17	ABSENT



FIG.13

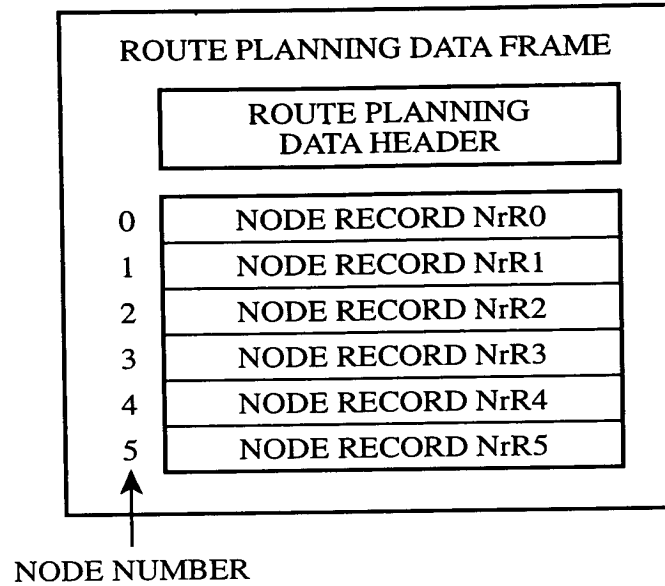


FIG.14

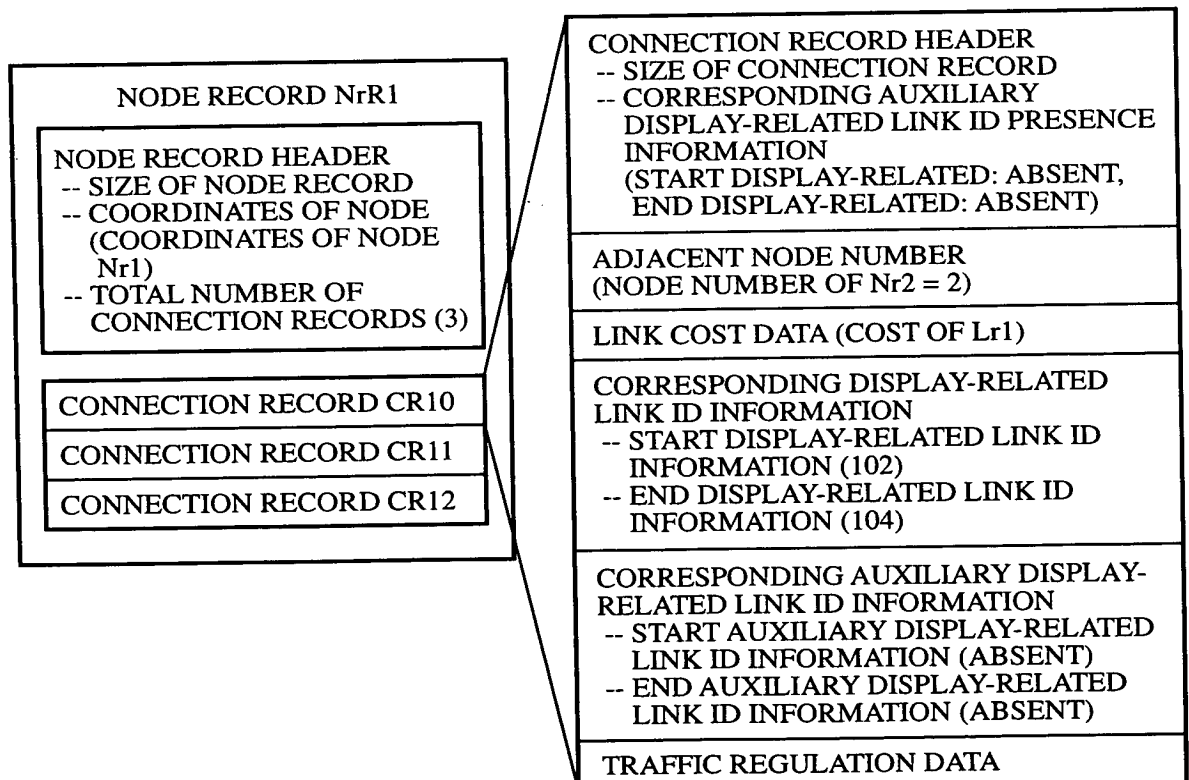


FIG.15

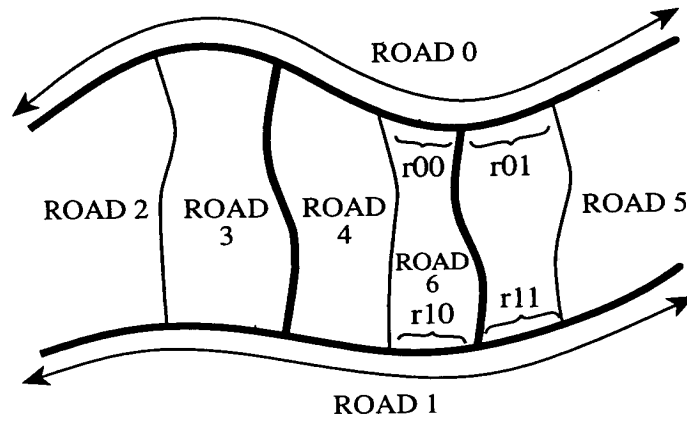


FIG.16

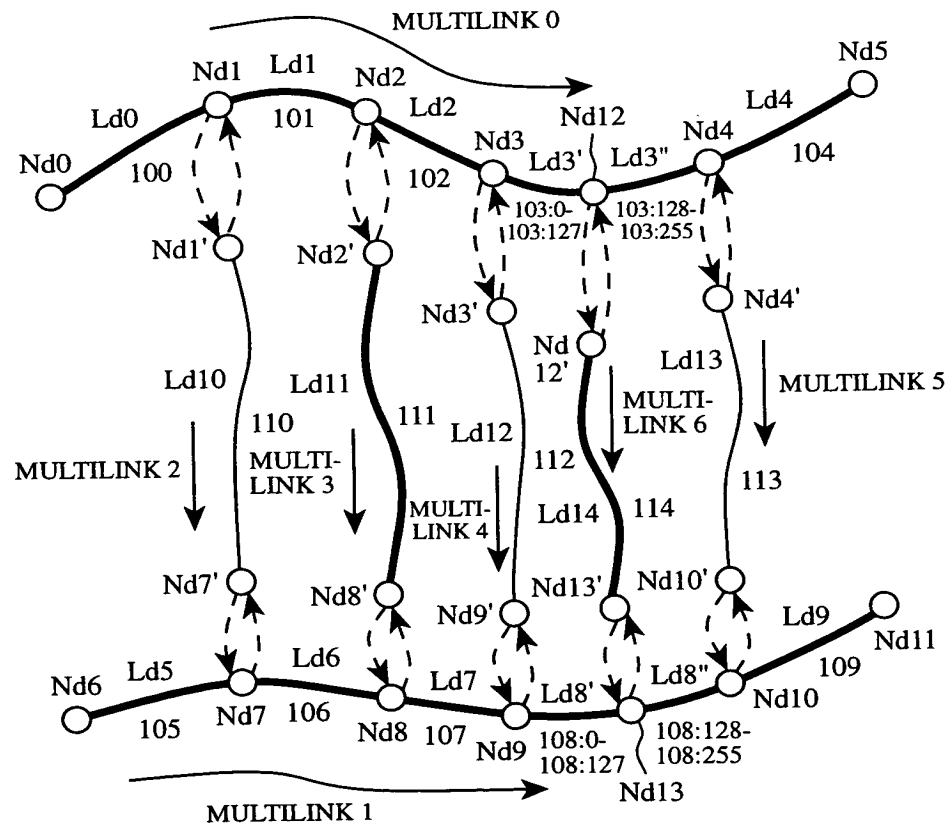


FIG.17

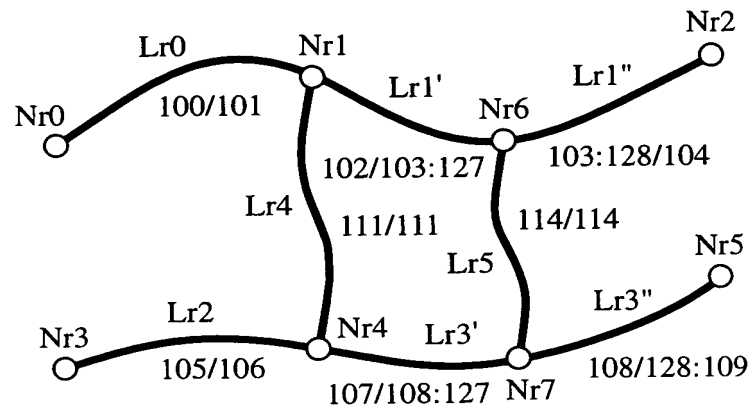
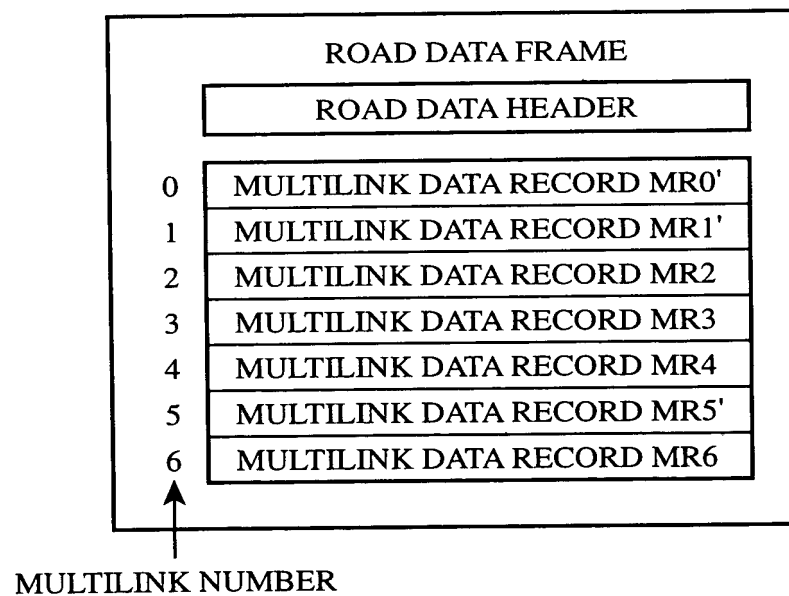


FIG.18



## MULTILINK DATA RECORD MR0'

DATA ITEM		NODE/LINK DATA RECORD						
		NLR00	NLR01	NLR02	NLR03'	NLR04I	NLR04	NLR05
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	1	1	0	1	1	1	0
	AUXILIARY DISPLAY- RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT
INTERSECTION DESCRIPTION	MULTILINK #	-1	2	3	4	6	5	-1
	NODE/LINK DATA #	-1	0	0	0	0	0	-1
COORDINATES OF NODE		COORD- DINATES OF Nd0	COORD- DINATES OF Nd1	COORD- DINATES OF Nd2	COORD- DINATES OF Nd3	COORD- DINATES OF Nd12	COORD- DINATES OF Nd4	COORD- DINATES OF Nd5
DISPLAY-RELATED LINK ID INFORMATION		100	101	102	103	103	104	-1
AUXILIARY DISPLAY- RELATED LINK ID INFORMATION		NULL	NULL	NULL	0	128	NULL	NULL
INTERMEDIATE POINT INFORMATION		COORD- DINATES OF P0	COORD- DINATES OF P1	ABSENT	COORD- DINATES OF P2	COORD- DINATES OF P3	COORD- DINATES OF P4	ABSENT

## MULTILINK DATA RECORD MR5'

DATA ITEM		NODE/LINK DATA RECORD	
		NLR50	NLR51
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	4	0
	AUXILIARY DISPLAY- RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT
INTERSECTION DESCRIPTION	MULTILINK #	0	1
	NODE/LINK DATA #	5	5
COORDINATES OF NODE		COORDINATES OF Nd4'	COORDINATES OF Nd10'
DISPLAY-RELATED LINK ID INFORMATION		113	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		NULL	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF P21-P24	ABSENT

FIG.19

FIG.20

MULTILINK DATA RECORD MR1'

DATA ITEM		NODE/LINK DATA RECORD						
		NLR10	NLR11	NLR12	NLR13'	NLR14I	NLR14	NLR15
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	1	1	0	1	1	1	0
	AUXILIARY DISPLAY- RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT
INTERSECTION DESCRIPTION	MULTILINK #	-1	2	3	4	6	5	-1
	NODE/LINK DATA #	-1	1	1	1	1	1	-1
COORDINATES OF NODE		COORDINATES OF Nd6	COORDINATES OF Nd7	COORDINATES OF Nd8	COORDINATES OF Nd9	COORDINATES OF Nd13	COORDINATES OF Nd10	COORDINATES OF Nd11
DISPLAY-RELATED LINK ID INFORMATION		105	106	107	108	108	109	-1
AUXILIARY DISPLAY- RELATED LINK ID INFORMATION		NULL	NULL	NULL	0	128	NULL	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF P5	COORDINATES OF P6	ABSENT	COORDINATES OF P7	COORDINATES OF P8	COORDINATES OF P9	ABSENT

FIG.21

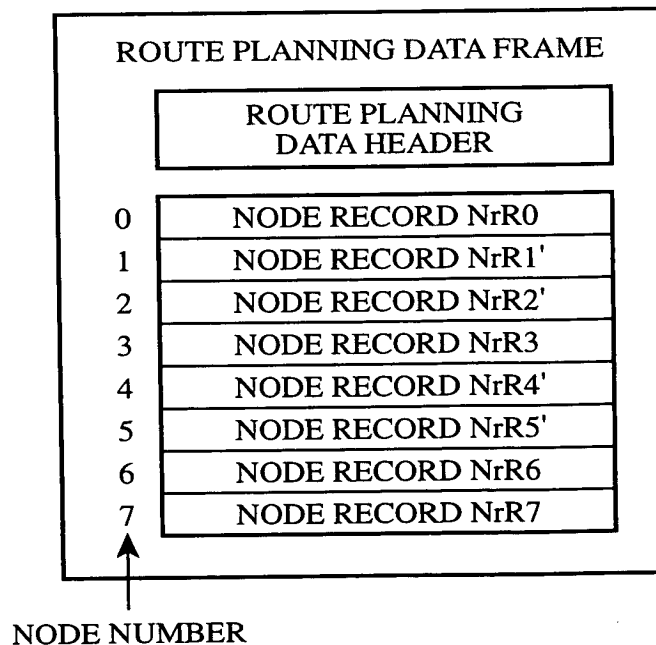


FIG.22

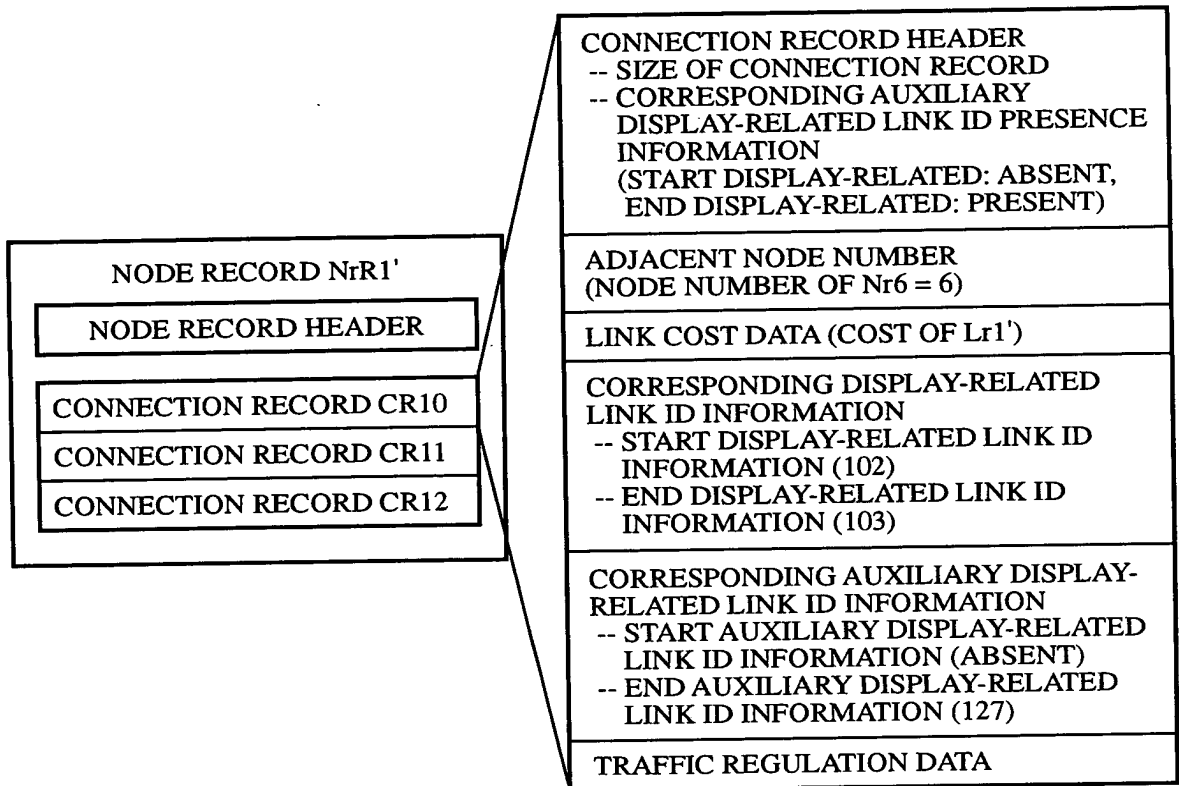


FIG.23

NODE RECORD Nr6

DATA ITEM		CONNECTION RECORD CR60	CONNECTION RECORD CR61	CONNECTION RECORD CR62
CORRESPONDING AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	START DISPLAY-RELATED	PRESENT	ABSENT	ABSENT
	END DISPLAY-RELATED	ABSENT	ABSENT	PRESENT
ADJACENT NODE NUMBER		NODE NUMBER OF Nr2 = 2	NODE NUMBER OF Nr7 = 7	NODE NUMBER OF Nr1 = 1
LINK COST DATA		COST OF Lr1''	COST OF Lr5	COST OF Lr1'
CORRESPONDING DISPLAY-RELATED LINK ID INFORMATION	START DISPLAY-RELATED	103	114	102
	END DISPLAY-RELATED	104	114	103
CORRESPONDING AUXILIARY DISPLAY-RELATED LINK ID INFORMATION	START DISPLAY-RELATED	128	NULL	NULL
	END DISPLAY-RELATED	NULL	NULL	127

FIG.24

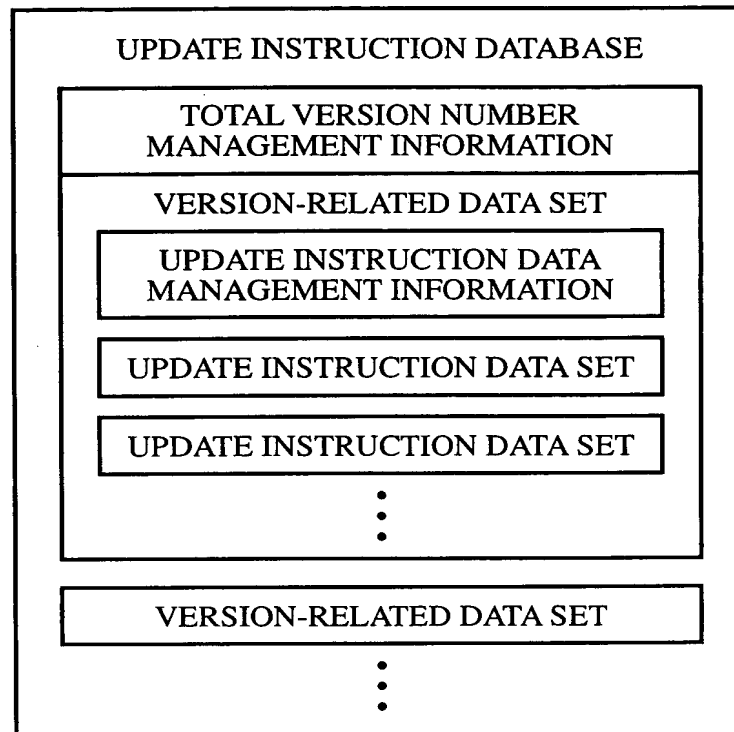


FIG.28

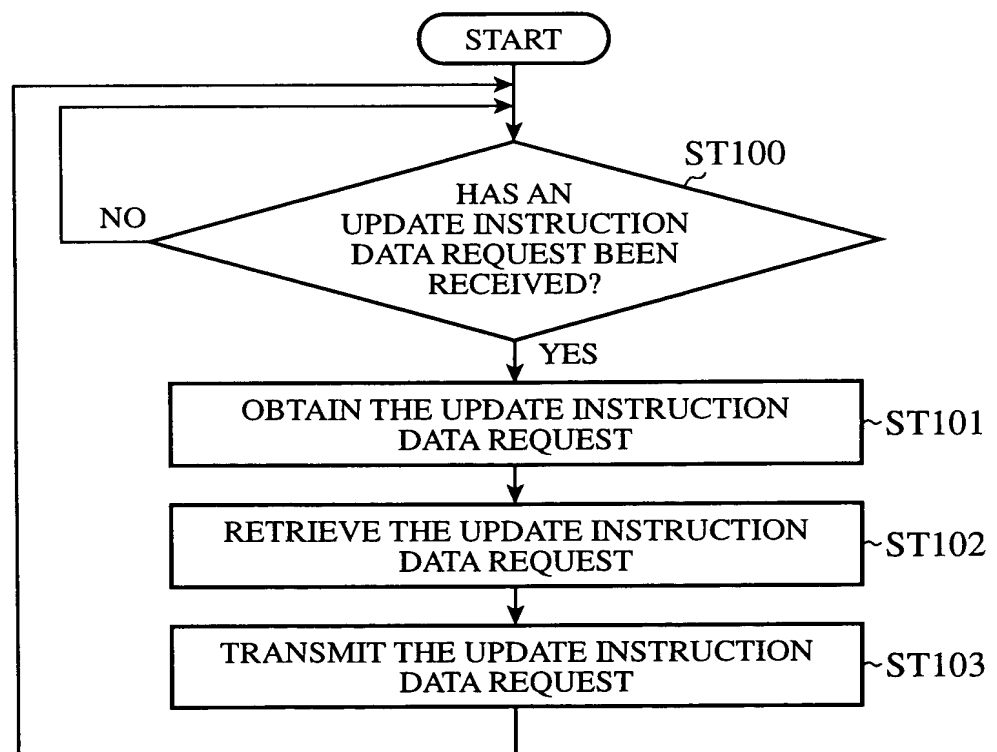


FIG.25

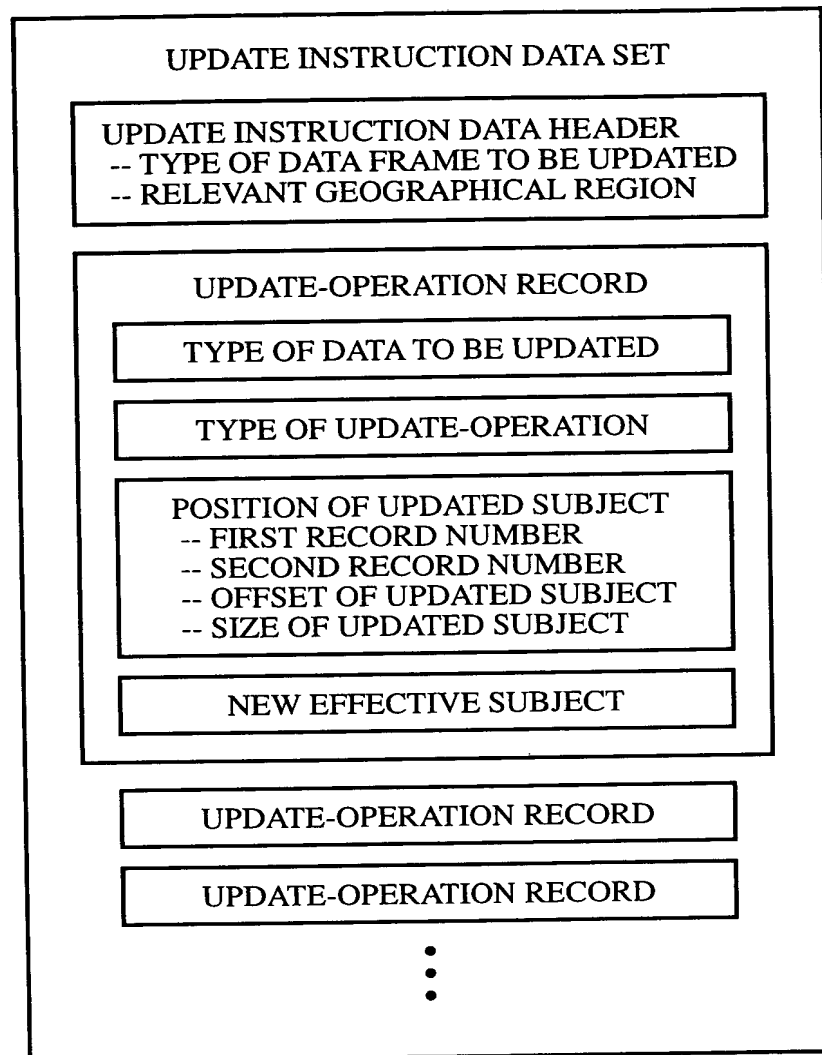




FIG.26A

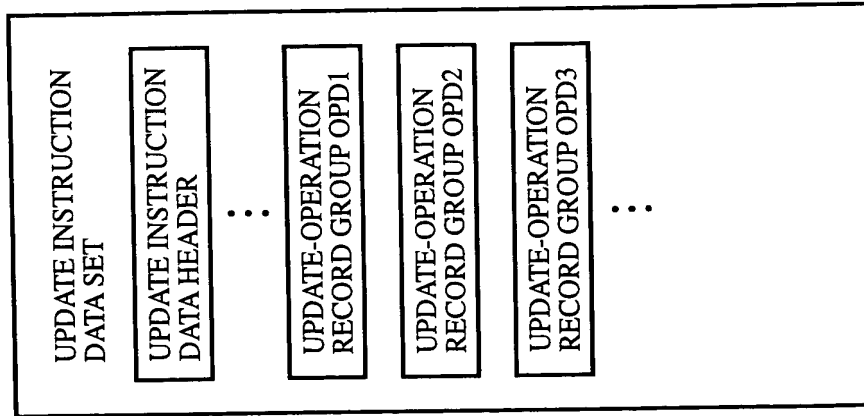


FIG.26B

	UPDATE- OPERATION RECORD 0	UPDATE- OPERATION RECORD 1	UPDATE- OPERATION RECORD 2	UPDATE- OPERATION RECORD 3
	ROAD DATA FRAME	ROAD DATA FRAME	ROAD DATA FRAME	ROAD DATA FRAME
TYPE OF DATA TO BE UPDATED	ROAD DATA FRAME	ROAD DATA FRAME	ROAD DATA FRAME	ROAD DATA FRAME
TYPE OF UPDATE-OPERATION	OVERWRITING	DELETION	INSERTION	INSERTION
POSITION OF UPDATED SUBJECT	FIRST RECORD NUMBER	0	0	0
	SECOND RECORD NUMBER	3	4	4
	OFFSET OF UPDATED SUBJECT	-1	-1	-1
	SIZE OF UPDATED SUBJECT	d0	d1	d3
NEW EFFECTIVE SUBJECT	MULTILINK HEADER	ABSENT	NODE/LINK DATA RECORD NLR03' (NODE/LINK DATA NUMBER = 3) IN FIG. 19	NODE/LINK DATA RECORD NLR04I (NODE/LINK DATA NUMBER = 4) IN FIG. 19

d0: SIZE OF MULTILINK HEAD  
d1: SIZE OF NODE/LINK DATA RECORD NLR03 (NODE/LINK DATA NUMBER = 3) IN FIG. 11  
d2: SIZE OF NODE/LINK DATA RECORD NLR03' (NODE/LINK DATA NUMBER = 3) IN FIG. 19  
d3: SIZE OF NODE/LINK DATA RECORD NLR04I (NODE/LINK DATA NUMBER = 4) IN FIG. 19

FIG.27A

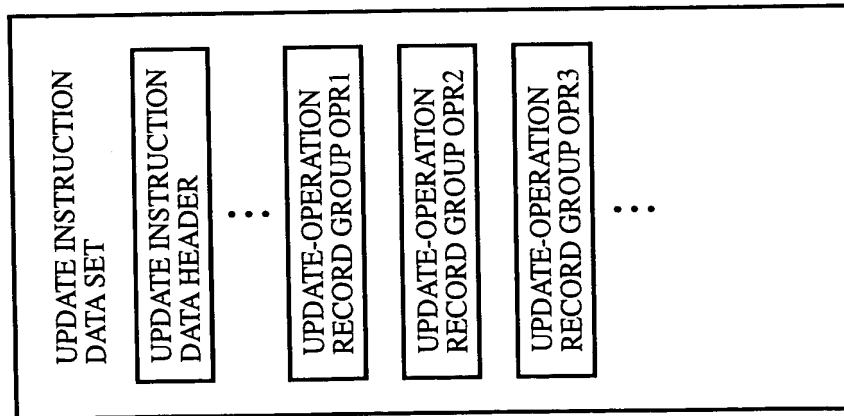


FIG.27B

	UPDATE- OPERATION RECORD 0	UPDATE- OPERATION RECORD 1	UPDATE- OPERATION RECORD 2
TYPE OF DATA TO BE UPDATED	ROUTE PLANNING DATA FRAME	ROUTE PLANNING DATA FRAME	ROUTE PLANNING DATA FRAME
TYPE OF UPDATE-OPERATION	OVERWRITING	DELETION	INSERTION
POSITION OF UPDATED SUBJECT	FIRST RECORD NUMBER	1	1
	SECOND RECORD NUMBER	0	1
	OFFSET OF UPDATED SUBJECT	-1	-1
	SIZE OF UPDATED SUBJECT	dr0	dr2
NEW EFFECTIVE SUBJECT	NODE RECORD HEADER IN FIG. 22		CONNECTION RECORD CR10 IN FIG. 22

d0: SIZE OF NODE RECORD HEADER IN FIG. 22  
d1: SIZE OF CONNECTION RECORD CR10 IN FIG. 14  
d2: SIZE OF CONNECTION RECORD CR10 IN FIG. 22

FIG.29

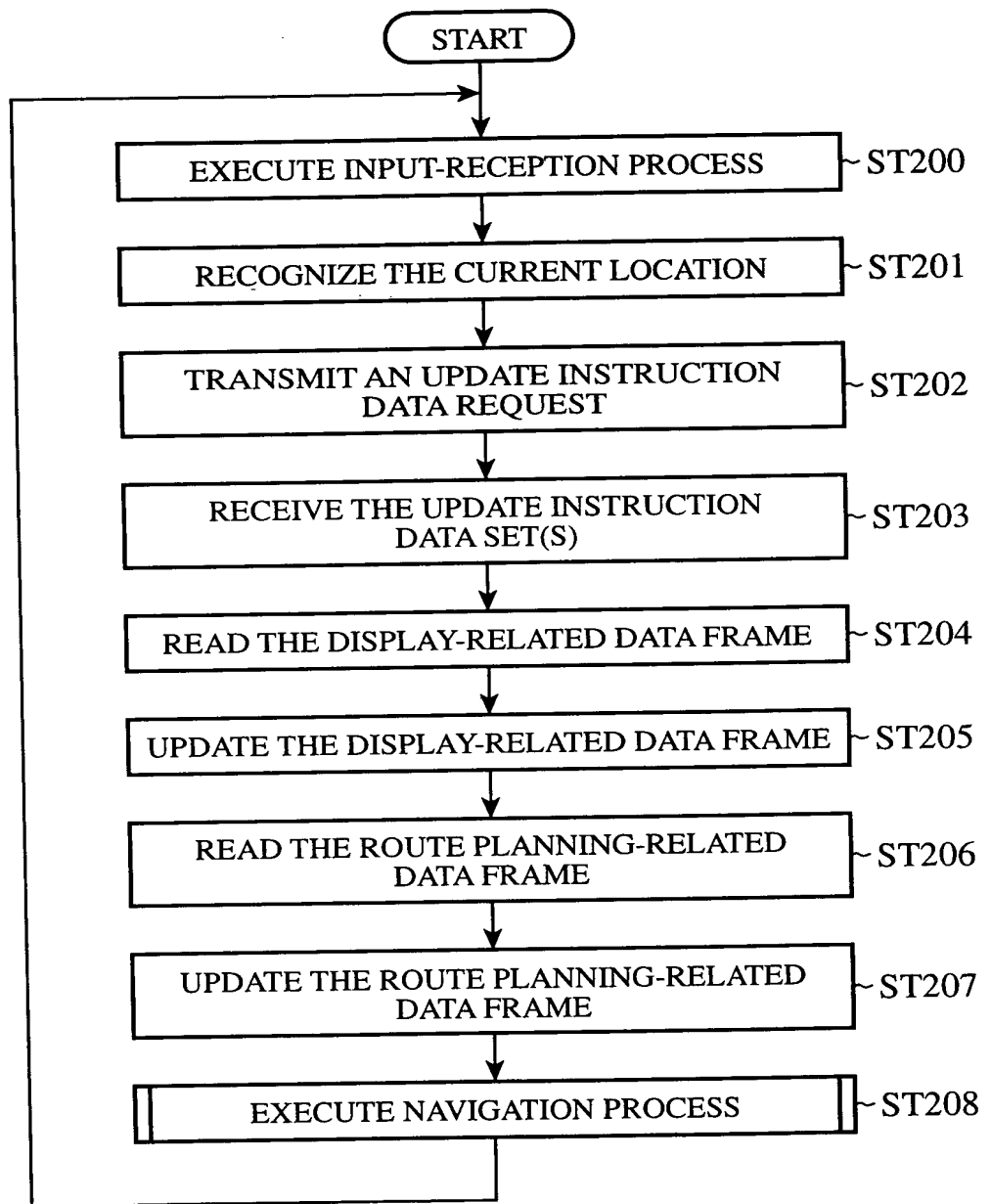


FIG.30

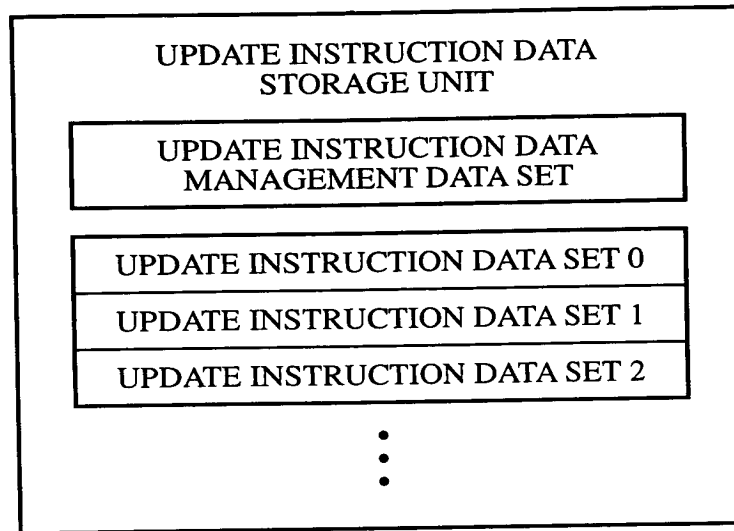


FIG.31

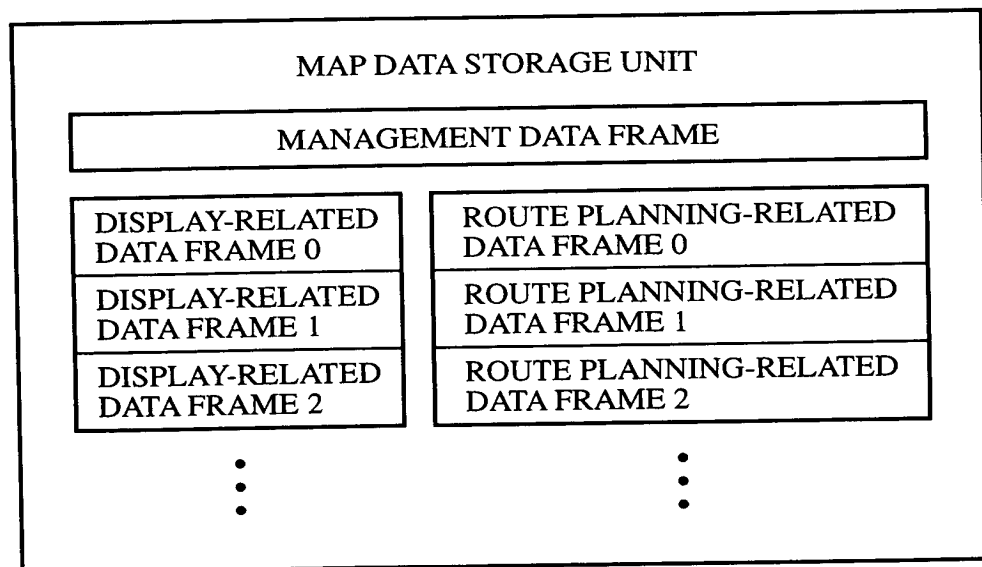


FIG.32

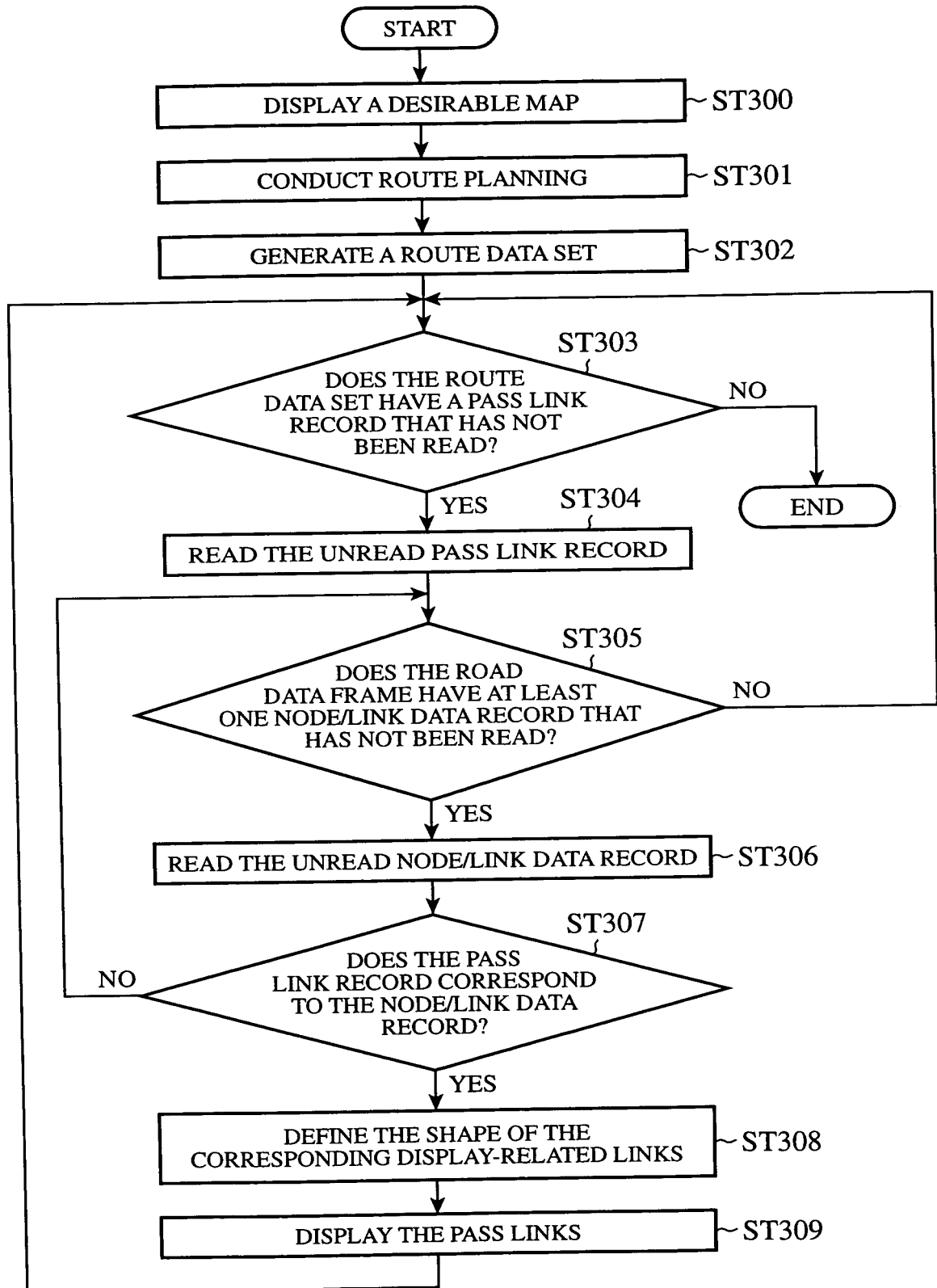


FIG.33A

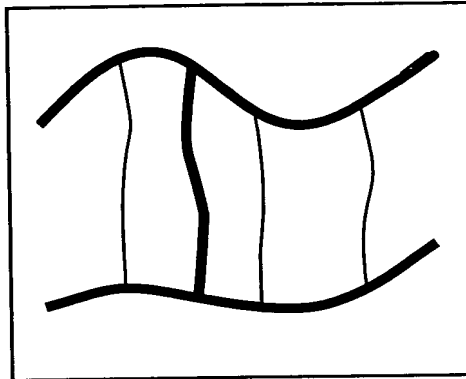


FIG.33B

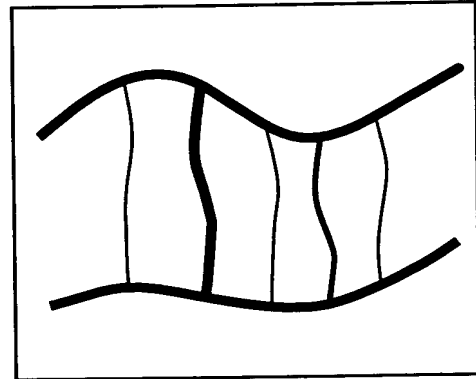


FIG.34

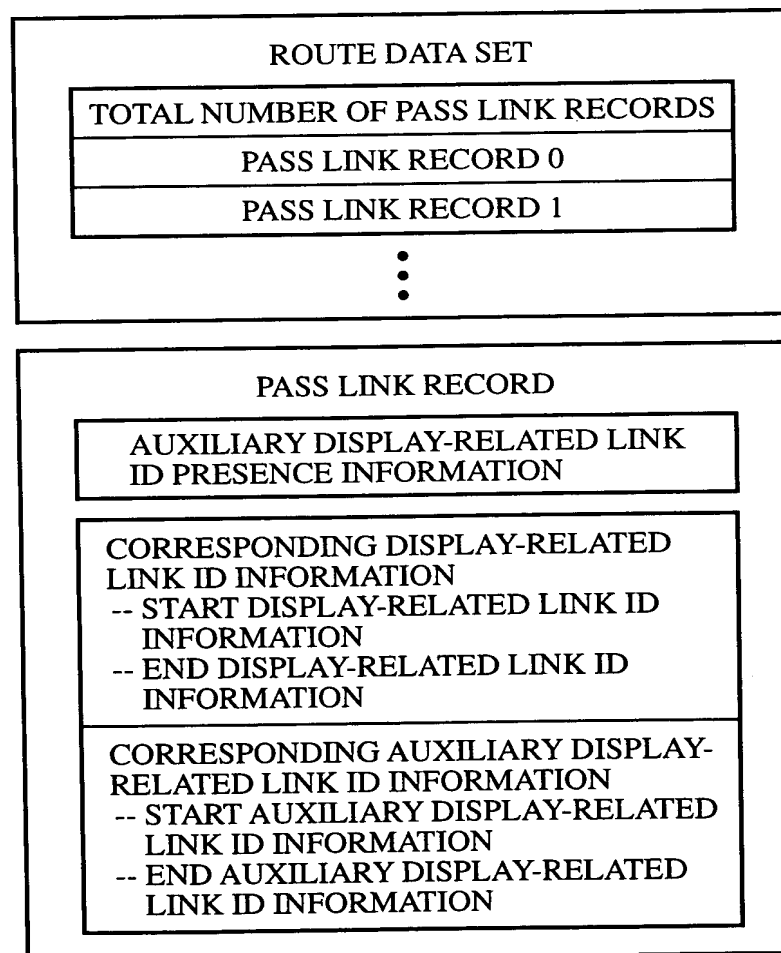


FIG.35

	PASS LINK RECORD 0	PASS LINK RECORD 1	PASS LINK RECORD 2	PASS LINK RECORD 3
AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	START DISPLAY- RELATED: ABSENT END DISPLAY- RELATED: ABSENT	START DISPLAY- RELATED: ABSENT END DISPLAY- RELATED: ABSENT	START DISPLAY- RELATED: ABSENT END DISPLAY- RELATED: ABSENT	START DISPLAY- RELATED: ABSENT END DISPLAY- RELATED: ABSENT
CORRESPONDING DISPLAY-RELATED LINK ID INFORMATION	START DISPLAY- RELATED LINK ID NUMBER	111	102	103
	END DISPLAY- RELATED LINK ID NUMBER	111	103	104
CORRESPONDING AUXILIARY DISPLAY-RELATED LINK ID INFORMATION	START AUXILIARY DISPLAY-RELATED LINK ID NUMBER	NULL	NULL	128
	END AUXILIARY DISPLAY-RELATED LINK ID NUMBER	NULL	127	NULL

FIG.36

	PASS LINK RECORD 0	PASS LINK RECORD 1	PASS LINK RECORD 2
AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	START DISPLAY- RELATED: ABSENT END DISPLAY- RELATED: ABSENT	START DISPLAY- RELATED: ABSENT END DISPLAY- RELATED: ABSENT	START DISPLAY- RELATED: ABSENT END DISPLAY- RELATED: ABSENT
CORRESPONDING DISPLAY-RELATED LINK ID INFORMATION	START DISPLAY- RELATED LINK ID NUMBER	111	102
	END DISPLAY- RELATED LINK ID NUMBER	111	104
CORRESPONDING AUXILIARY DISPLAY-RELATED LINK ID INFORMATION	START AUXILIARY DISPLAY-RELATED LINK ID NUMBER	NULL	NULL
	END AUXILIARY DISPLAY-RELATED LINK ID NUMBER	NULL	NULL

FIG.37A

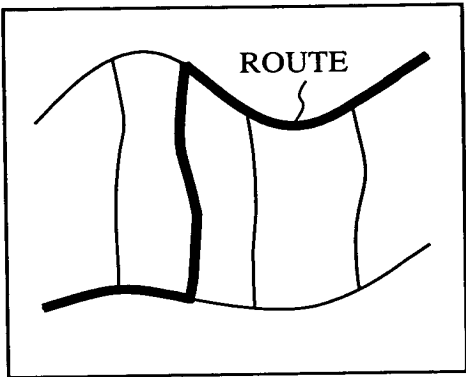


FIG.37B

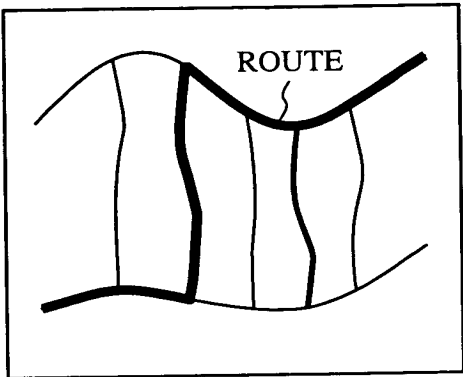


FIG.40

ROAD DATA FRAME	
ROAD DATA HEADER	
0	MULTILINK DATA RECORD MR0S
1	MULTILINK DATA RECORD MR1S
2	MULTILINK DATA RECORD MR2S
3	MULTILINK DATA RECORD MR3S
4	MULTILINK DATA RECORD MR4S
5	MULTILINK DATA RECORD MR5S
6	MULTILINK DATA RECORD MR6S
7	MULTILINK DATA RECORD MR7S
8	MULTILINK DATA RECORD MR8S



## MULTILINK DATA RECORD MR0

DATA ITEM		NODE/LINK DATA RECORD					
		NLR00	NLR01	NLR02	NLR03	NLR04	NLR05
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	1	1	0	2	1	0
	AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT
	LINK VALIDITY INFORMATION	VALID	VALID	VALID	VALID	VALID	VALID
INTERSECTION DESCRIPTION	MULTILINK #	-1	2	3	4	5	-1
	NODE/LINK DATA #	-1	0	0	0	0	-1
COORDINATES OF NODE		COORDINATES OF Nd0	COORDINATES OF Nd1	COORDINATES OF Nd2	COORDINATES OF Nd3	COORDINATES OF Nd4	COORDINATES OF Nd5
DISPLAY-RELATED LINK ID INFORMATION		100	101	102	103	104	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		NULL	NULL	NULL	NULL	NULL	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF P0	COORDINATES OF P1	ABSENT	COORDINATES OF P2 AND P3	COORDINATES OF P4	ABSENT

## MULTILINK DATA RECORD MR5

DATA ITEM		NODE/LINK DATA RECORD	
		NLR50	NLR51
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	4	0
	AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT
	LINK VALIDITY INFORMATION	VALID	VALID
INTERSECTION DESCRIPTION	MULTILINK #	0	1
	NODE/LINK DATA #	4	4
COORDINATES OF NODE		COORDINATES OF Nd4'	COORDINATES OF Nd10'
DISPLAY-RELATED LINK ID INFORMATION		113	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		NULL	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF P21-P24	ABSENT

FIG.38

FIG.39

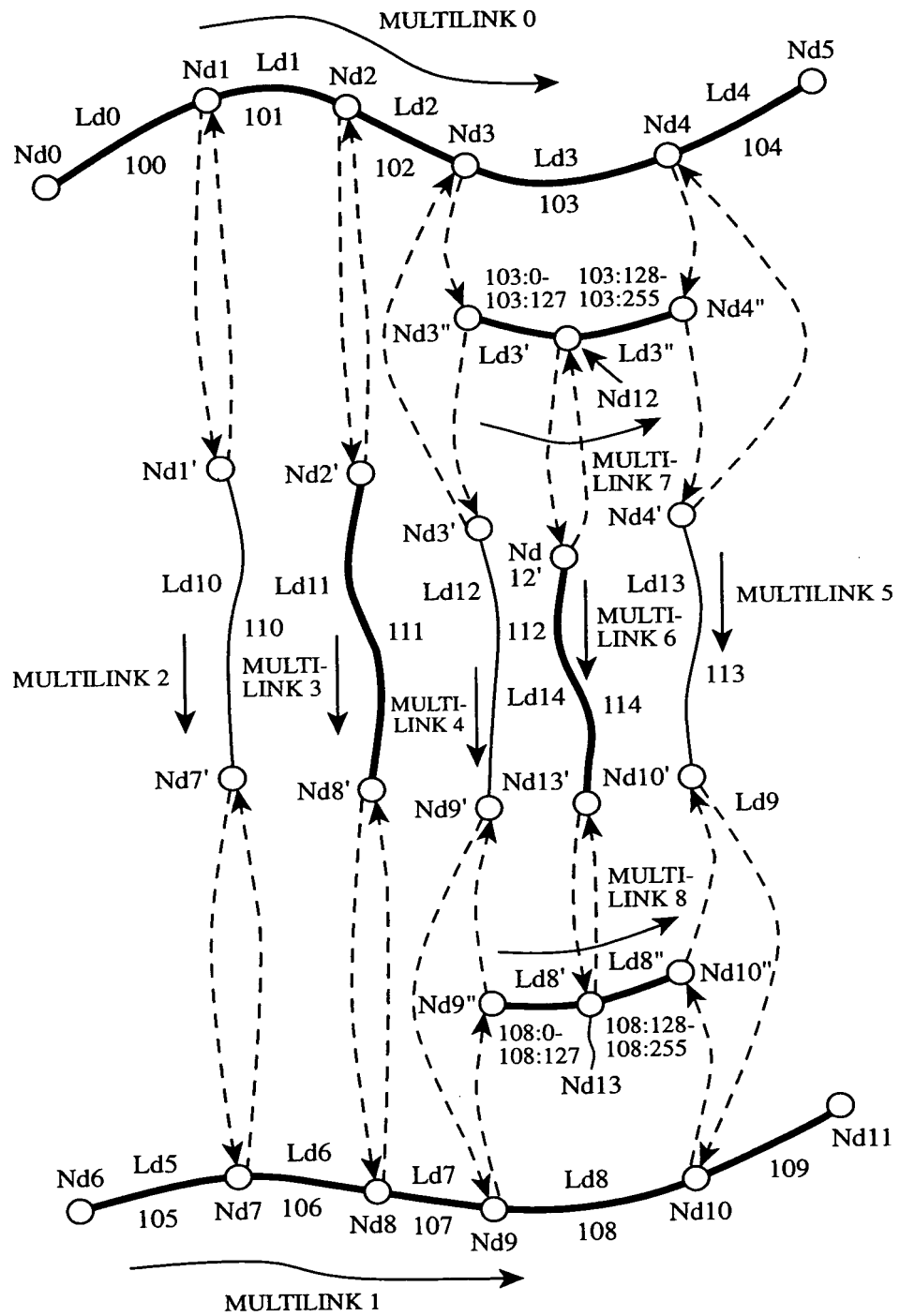


FIG.41

## MULTILINK DATA RECORD MR0S

DATA ITEM		NODE/LINK DATA RECORD					
		NLR00	NLR01	NLR02	NLR03S	NLR04S	NLR05
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	1	1	0	2	1	0
	AUXILIARY DISPLAY- RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT
	LINK VALIDITY INFORMATION	VALID	VALID	VALID	INVALID	VALID	VALID
INTERSECTION DESCRIPTION	MULTILINK #	-1	2	3	7	7	-1
	NODE/LINK DATA #	-1	0	0	0	2	-1
COORDINATES OF NODE		COOR- DINATES OF Nd0	COOR- DINATES OF Nd1	COOR- DINATES OF Nd2	COOR- DINATES OF Nd3	COOR- DINATES OF Nd4	COOR- DINATES OF Nd5
DISPLAY-RELATED LINK ID INFORMATION		100	101	102	103	104	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		NULL	NULL	NULL	NULL	NULL	NULL
INTERMEDIATE POINT INFORMATION		COOR- DINATES OF P0	COOR- DINATES OF P1	ABSENT	COOR- DINATES OF P2 AND P3	COOR- DINATES OF P4	ABSENT

FIG.42

MULTILINK DATA RECORD MR7S

DATA ITEM		NODE/LINK DATA RECORD		
		NLR70S	NLR71S	NLR72S
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	1	1	0
	AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	PRESENT	PRESENT	ABSENT
	LINK VALIDITY INFORMATION	VALID	VALID	VALID
INTERSECTION DESCRIPTION	MULTILINK #	0	6	0
	NODE/LINK DATA #	3	0	4
COORDINATES OF NODE		COORDINATES OF Nd3"	COORDINATES OF Nd12	COORDINATES OF Nd4"
DISPLAY-RELATED LINK ID INFORMATION		103	103	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		0	128	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF P2	COORDINATES OF P3	ABSENT

FIG.43

MULTILINK DATA RECORD MR6S

DATA ITEM		NODE/LINK DATA RECORD	
		NLR60S	NLR61S
NODE/LINK DATA HEADER	TOTAL # OF INTERMEDIATE POINTS	TOTAL # OF INTERMEDIATE POINTS IN Ld14	0
	AUXILIARY DISPLAY-RELATED LINK ID PRESENCE INFORMATION	ABSENT	ABSENT
	LINK VALIDITY INFORMATION	VALID	VALID
INTERSECTION DESCRIPTION	MULTILINK #	7	8
	NODE/LINK DATA #	1	1
COORDINATES OF NODE		Nd12'	Nd13'
DISPLAY-RELATED LINK ID INFORMATION		114	-1
AUXILIARY DISPLAY-RELATED LINK ID INFORMATION		NULL	NULL
INTERMEDIATE POINT INFORMATION		COORDINATES OF INTERMEDIATE POINT(S) IN Ld14	ABSENT

FIG.44

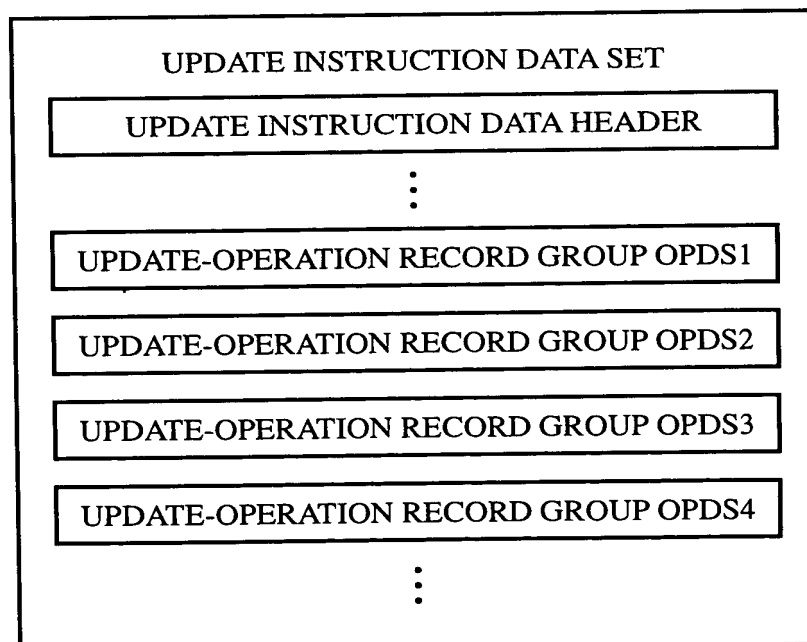


FIG.45

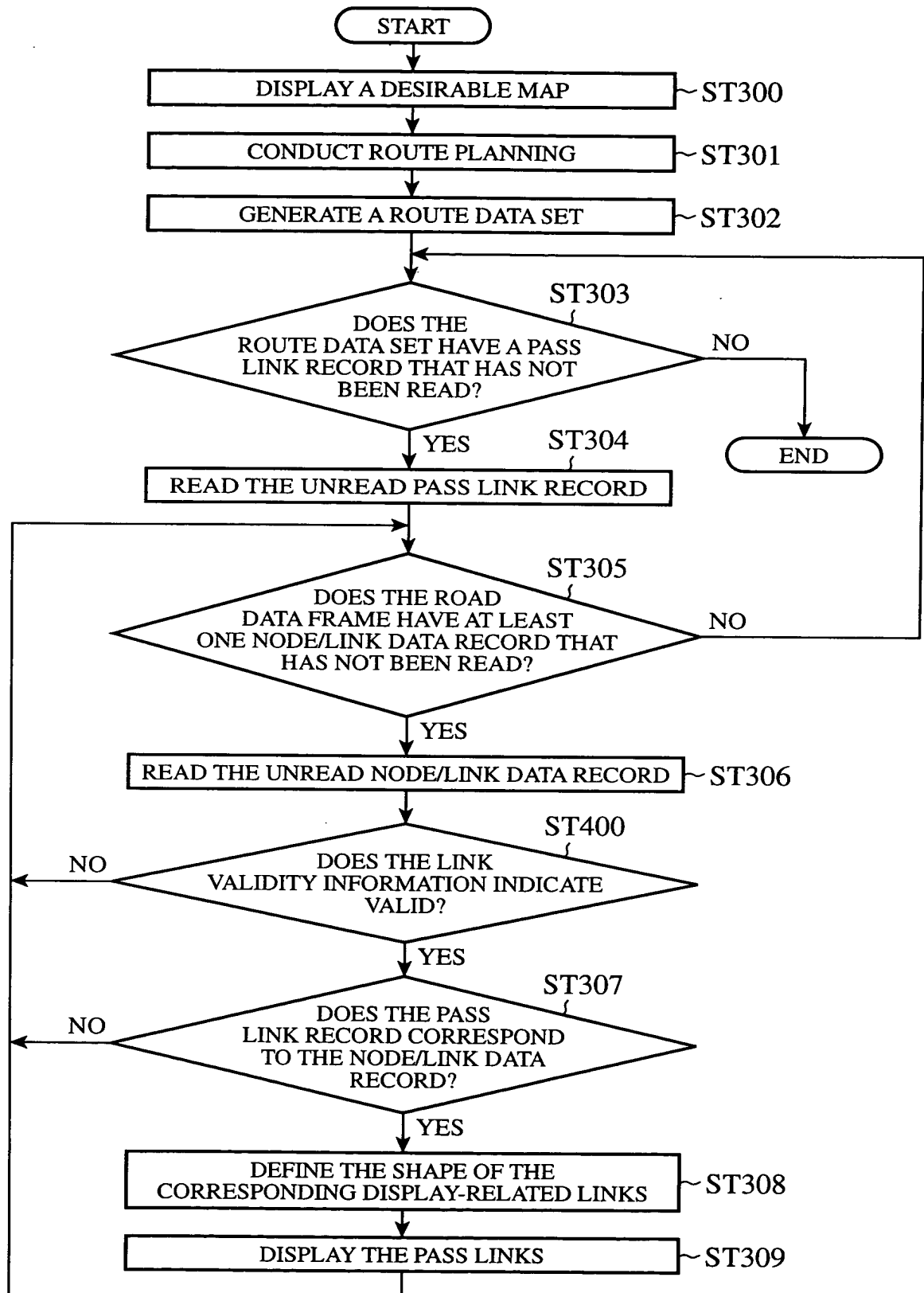


FIG.46

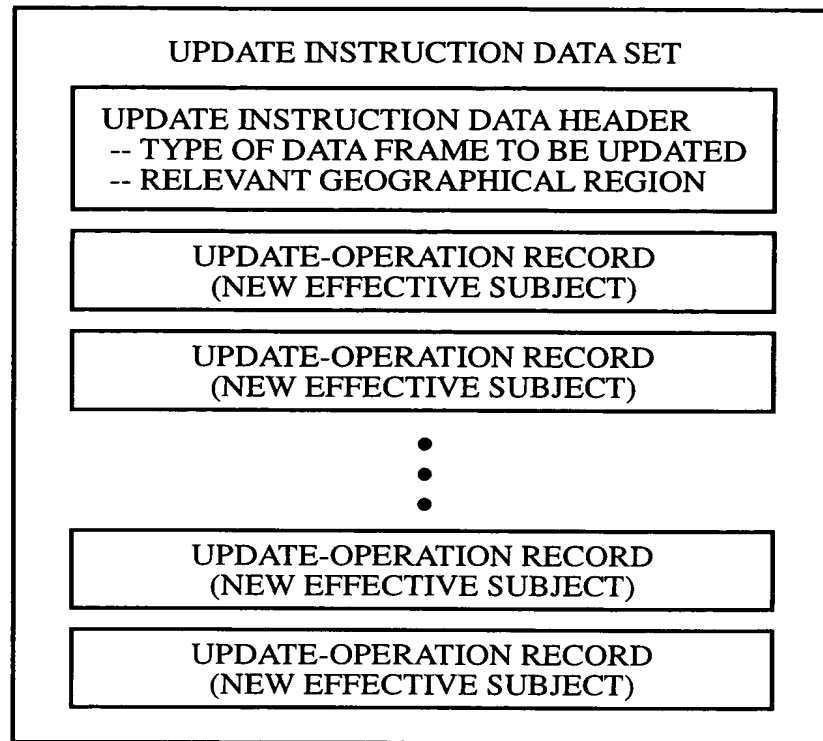


FIG.49

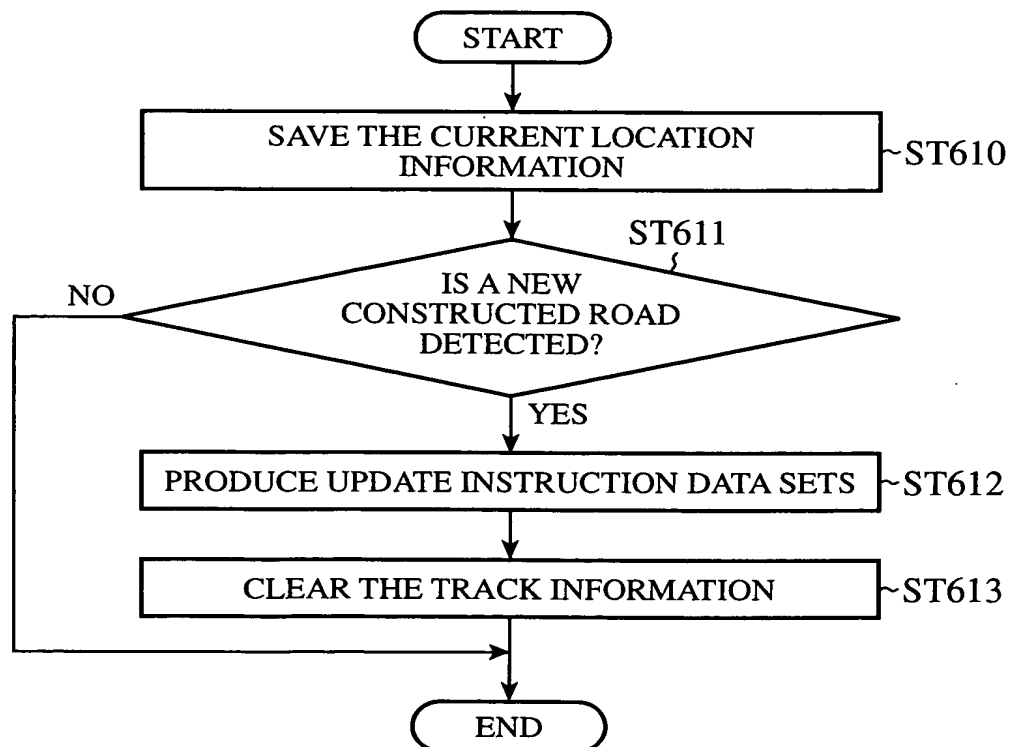


FIG.47

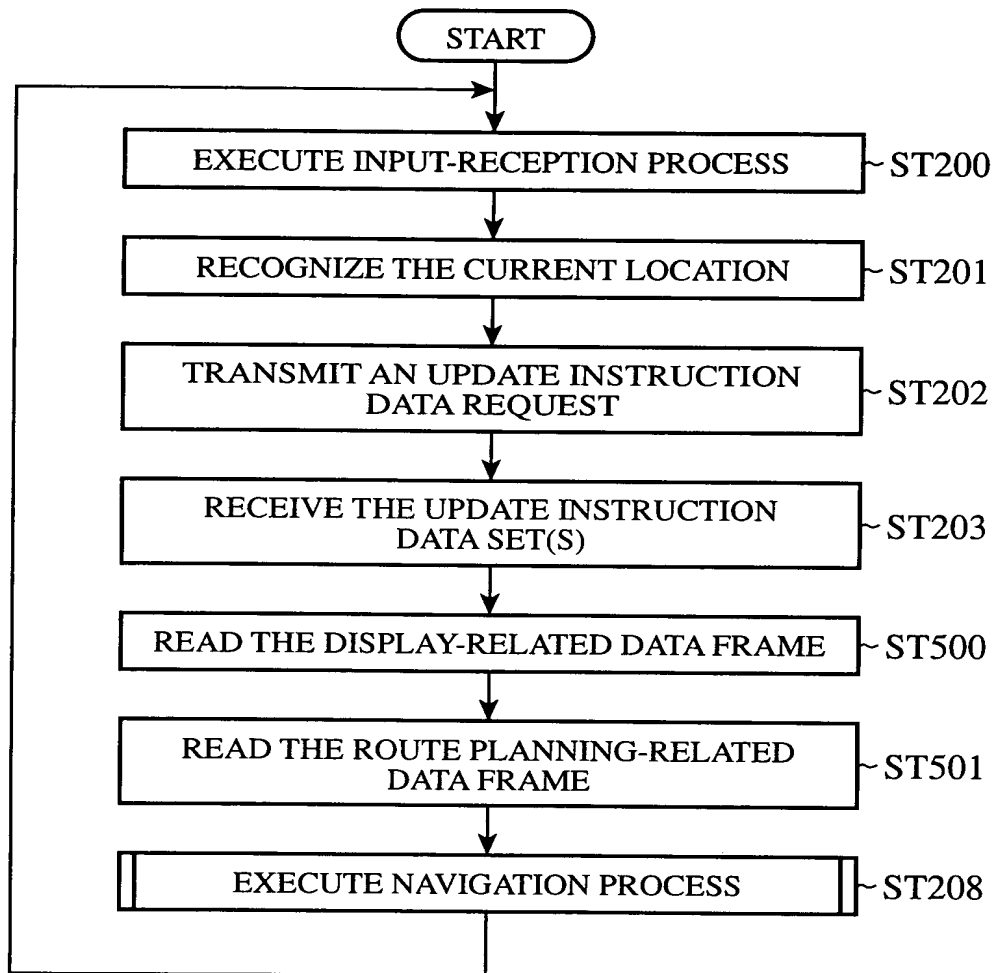




FIG.48

